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# Urban Lake Shoreline Characteristic Assessment in Cuyahoga County

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# **Urban Lake Shoreline Characteristic Assessment in Cuyahoga County**

**College of Sciences and Health Professions**

**Department of Biological, Geological, and Environmental Sciences**

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**Faculty Advisor: Julie A. Wolin, Ph.D.**

## **Abstract**

More than 100 mid-size inland lakes and reservoirs (greater than 2.5 acres) are located in highly urbanized Cuyahoga County. Surrounding development, along with poor management and neighboring land-use practices, can greatly influence the water quality of these aquatic ecosystems. Runoff, caused by an increase in impervious surface or a lack of shoreline vegetation, results in excess nutrients entering lakes and is a leading cause of eutrophication. Eutrophication, or over-enrichment by nutrients, stimulates excessive algae and macrophyte (submerged plant) growth. When these organisms die, they settle onto the sediment where they decompose and often create low-oxygen environments, compromising the health of the freshwater community. We assessed shoreline characteristics, macrophyte cover, and algal presence for 35 inland lakes within Cuyahoga County to determine whether there is a correlation between shoreline characteristics and the presence and abundance of algae and submerged plants.